Tannehill (1938) has mentioned one storm for 1861 whereas three additional ones has been referred to by Ludlum (1963). Co-authors Dunn and Miller (1960) have mentioned a fourth additional storm. The author of this study has recently documented three storms which had not been mentioned before, bringing from five to eight the total number of known storms for 1861. Therefore, the author's contribution represents a 60 percent increase.

Storm 1, 1861 (Jul. 6-12).

Tannehill (1938) listed this storm as having occurred in Guadeloupe and St. Kitts on July 6-7. The author of this study has extended the documentation of this storm for some more days as Storm 1, 1861 moved towards higher latitudes in the western Atlantic. A track for this storm is shown in Fig. 4.

In compliance with what Tannehill (1938) has stated, the track was started near 16 degrees North, 60 degrees West on July 6 and then continued over Guadeloupe and St. Kitts. Because there is no mention to the storm in the West Indian mails that were collected from Guadeloupe on July 12 and from St. Kitts on July 13 and that were published in The Times, London, Jul. 30, 1861, p.9, col.6, the author of this study believes that Storm 1, 1861 was a weak one when it affected those islands.

The following marine information was relevant in determining the storm track over the western Atlantic: 1) Schr. "D. Fantazzi", Jul. 18, lat. 32 10 N., long. 68 58 W., fell in with Schr. "Bowditch", full of water, and took off Captain Perkins, the rest of the crew having been lost. According to Capt. Perkins, the "Bowditch" sailed from New York for St. Ann's Bay, Jamaica, on July 2 and on July 10, in a tremendous hurricane, was boarded by a sea which carried away both masts and washed all hands overboard. He succeded in getting back on board by the main boom and remained on the wreck 8 days without food and water until rescued by Capt. Wooster of the "Fantazzi", from Arroyo, Puerto Rico, to this port (The New York Times, Jul. 26, 1861, p.8, col.6). 2) Message from Ponce, Puerto Rico, Jul. 24. Brig "Echo", from Baltimore, has just arrived at Ponce; had lost part of deckload and monkey rail in a hurricane on July 10 (The New York Times, Aug. 8, 1861, p.8, col.6). 3) Schr. "Maryland". Jul.18, lat. 31 28 N., long 71 12 W., saw a brig with a signal of distress flying, which proved to be the "Creole", having been experienced a hurricane on July 11 which blew away sails and carried away the foremast. The "Creole" was leaking badly and the "Maryland" took off her captain and crew, 9 in number (The New York Times, Jul. 27, 1861, p.8, col.6).

According to the information furnished by the "Bowditch", the "Echo" and the "Creole", Storm 1, 1861 attained hurricane intensity.

Storm 2, 1861 (Aug. 14-17).

Ludlum (1963) mentioned this storm as having occurred at Key West and South Florida on Aug. 14-16. The author of this study has

produced the westward track for Storm 2, 1861 which is shown in Fig.4.

The following information was relevant to studying the evolution of the storm: 1) Schr. "Vigilant" brought to New York the crews of Schr. "John Stanley" and bark "Linea" which were wrecked at Fortune Island (Bahamas) on Aug. 14 (The New York Times, Sept. 22, 1861, p.8, col.6). 2) Schr. "Time" (from Nassau in 11 days) reported that barks "William and Jane", "Sarah Elizabeth" and "Artic" were wrecked in the Bahamas (The New York Times, Aug. 30, 1861, p.8, col.6). 3) Bark "Eglantine" (from Philadelphia to Havana) was ashore at Grand Bahama on Aug. 16, leaking badly (The New York Times, Aug. 31, 1861, p.8, col.6). 4) Steamship "Santiago de Cuba" left Havana at noon Aug. 14. At 4 P.M. experienced a heavy squall with rain which in two hours increased to a hurricane from N.W. to N.E. and E.N.E., from 4 to (?) A.M., the gale still increasing and heavy seas, barometer at 29.30 inches, at 9 A,M. (Aug. 15) was struck by a sea which carried away the light work of the paddle boxes. 8 P.M. passed the Great Isaacs (The New York Times, Aug. 20, 1861, p.8, col.6). Author's note: Great Isaacs refers to a lighthouse in the western Bahamas. 5) Correspondence from Havana, Aug. 28. Great anxiety is felt here with regard to the safety of the steamer "Santiago de Cuba" which left on the evening of the 14th. The hurricane experienced that night along the eastern coast of the island (Cuba) has caused the wreck of several vessels and might have overtook the "Santiago" (The New York Times, Sept. 3, 1861, p.5, col.2). 6) News from New York, Sept. 5. The "Emerald Isle" went ashore at Matecumbe on Aug. 16, the "Argentina" was lost at Carysfort Light on Aug. 14 and the "Sir Walker Raleigh" was wrecked at Cape Florida on Aug. 15 (The Times, London, Sept. 16, 1861, p.9, col.6). 7) Brig "Kate Stevens". Aug. 15, lat. 23 40 N., long. 81 10 W., experienced a hurricane from N.E. to S.E. which lasted for 36 hours, the sea making a clear breach over the vessel (The New York Times, Aug. 30, 1861, p.8, col.6). 8) Havana was visited with severe rains about Aug. 15 (The Times, London, Sept. 13, 1861, p.11, col.2). 9) Schr. "My Rover" (from Trinidad, Cuba, in 18 days). Aug. 17, off Cape San Antonio, during a very heavy squall, was brought to by the U.S. steamer "Powhalan" (The New York Times, Sept. 3, 1861, p.4, col.6).

As Ludlum (1963) has referred to Storm 2, 1861 as "the Key West hurricane, Aug. 14-16, 1861" and the "Santiago de Cuba" reported a barometer reading of 29.30 inches (apparently outside the eye of the storm), there should not be any doubt that Storm 2, 1861 was a hurricane.

Storm 3, 1861 (Aug. 25-30).

The author of this study has recently documented this storm which had not been mentioned before. A track for Storm 3, 1861 is displayed in Fig. 4.

Documentation of this storm and its track was based on the following information: 1) Brig "Scotland", which had sailed for Genoa on Aug. 16, returned to New York for repairs after having encountered boisterous weather and squalls at lat. 37 N., long. 62 W. on Aug. 25 and a N.W. gale which increased to a hurricane during

the night of Aug. 25, with tremendous heavy seas (The New York Times, Sept. 16, 1861, p.8, col.6). 2) Ship "Marianne" (from Liverpool in 40 days). Aug. 29, lat. 44 N., long. 43 W., during a hurricane, lost fore and maintopsails (The New York Times, Sept. 20, 1861, p.8, col.6). 3) Bark "Harvest Queen". Aug. 30, lat. 48 13 N, long. 35 54 W., experienced a hurricane from N. to N.W. with heavy sea running; barometer fell to 28.30 inches during the gale (The New York Times, Sept. 25, 1861, p.8, col.6).

The very low pressure reported by the "Harvest Queen" strongly indicates that Storm 3, 1861 attained hurricane intensity. However, it is likely that the storm had been gradually becoming

extratropical at the time that pressure was reported.

Storm 4, 1861 (Sept. 17).

This is the second new storm case which has been documented by the author for 1861. The following information was used in documentig the storm: Bark "David G. Wilson" put in at St. Thomas on Oct. 5 after having been dismasted in a hurricane at lat. 28 27 N., long. 50 17 W. on Sept. 17 (The Times, London, Oct. 30, 1861, p.1, col.1) Based on the information above, Storm 4, 1861 was placed near 28.5 degrees North, 50 degrees West on Sept. 17 (Fig. 4). No additional information has been found about this storm and a track for it has not been attempted.

Storm 5, 1861 (Sept. 27-28).

Ludlum (1963) has referred to this storm as the "Equinoctial Storm" and has cited the N.Y. Tribune, Oct. 1, 1861 as his source. The author of this study has produced the track for Storm 5, 1861 which is shown in Fig. 4.

The following information was relevant to studying the evolution of the storm: 1) U.S. Mail steamship "Marion". Sept. 27, at 4 P.M., 65 miles S. of Hatteras, experienced a very violent gale from S.E. to S.W. accompanied by severe thunder and lightning and floods of rain; it lagged until midnight (The New York Times, Sept. 30, 1861, p.8, col.6). 2) Schr. "Artic", when anchored in the Breakwater during a heavy gale on Sept. 27, saw a vessel coming to Cape Henelopen blowing her whistle apparently in a sinking condition as she was run ashore (The New York Times, Sept. 30, 1861, p.8, col.6). 3) Brig "Belle", lat. 39 54 N., long. 73 W., encountered a S. to S.E. gale on Sept. 27 during which it suffered damage, returning then to New York (The New York Times, Oct. 2, 1861, p.8, col.6). 4) Bark "Virginia Ann", coming to New York from Matanzas, encountered a violent gale which increased to a hurricane from S.S.E. on Sept. 27 (The New York Times, Oct. 3, 1861, p.8, col.6). 5) At sunset Sept. 27, outside the Hook (Sandy Hook), wind from S.S.E. blowing a gale (The New York Times, Sept. 28, 1861, p.8, col.6). 6) Message from Burlington, N.J., Sept. 28. A violent gale commenced here early last evening lasting until midnight. Trees were uprooted and other damage to property was done (The New York Times, Sept. 29, 1861, p.8, col.6). 7) Message from Boston, Sept. 28. A strong southerly gale with light rain commenced here about 12 o'clock last night. It lasted for 5 hours. No serious

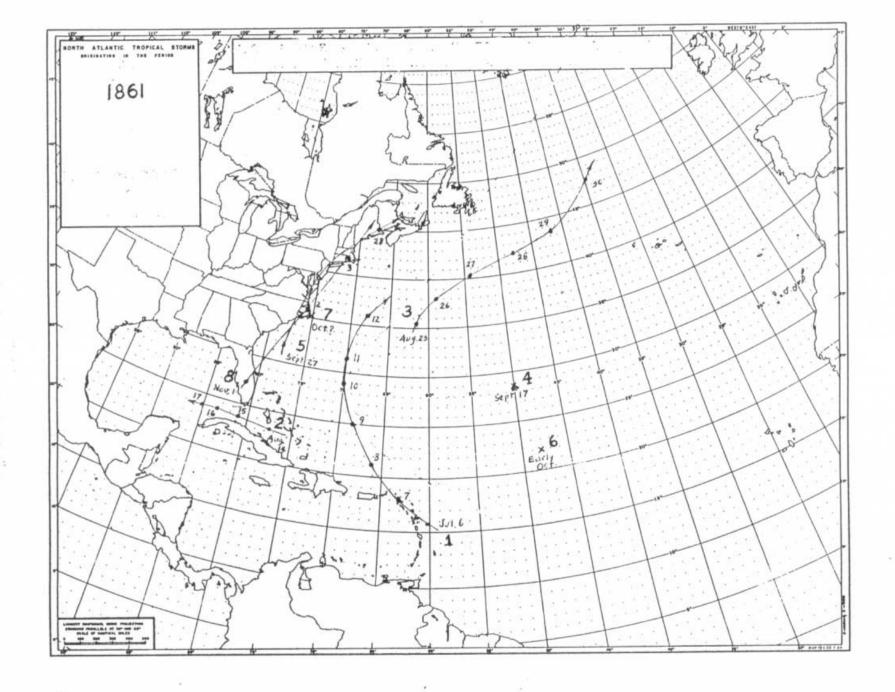


Fig. 4

damage is as yet reported. There is a ship ashore (name unknown) on the middle ground at Holmes' Hole, she is rolling heavily (The New York Times, Sept. 29, p.8, col.5). 8) Bark "Guilding Star" (coming to New York from England). Sept. 28, experienced a strong gale from the N.W. (The New York Times, Oct. 2, 1861, p.8, col.6).

Storm 6, 1861 (Early October).

The author documented this storm based on the following information: Schr. "Mariquita" (from Rio Congo, Africa, Sept. 2). Sept 21, crossed the Equator in long. 32 40 W. When in lat. 20 30 N., long. 47 W., experienced a violent gale from S.S.W. which lasted for 15 hours. Oct. 16, lat. 24 29 N., long. 68 18 W., experienced a violent gale from S.W. during which carried away the head of the foremast (The New York Times, Oct. 21, 1861, p.8, col.6).

As the "Mariquita" is known to have arrived in New York on Oct. 20, her Oct. 16 position was obviously wrong because the vessel would have been off her track and could not have arrived in New York in 4 days from the alleged Oct. 16 position. If a typographic error of a 2 for a 3 were accepted and the Oct. 16 position was in reality close to lat. 34 N., long. 68 W., then the vessel would have been near 20.5 degrees North, 47 degrees West early in October when she encountered the first violent gale. This gale should have been associated with a tropical cyclone; however, the second gale reported was probably associated with an extratropical system.

Based on the discussion above, the author of this study decided to place Storm 6, 1861 near 22 degrees North, 48 degrees West early in October 1861 (Fig. 4). Due to insufficient information, no track for this storm was attempted. However, it is possible that a heavy gale from S.W. the ship "Wellington" experienced at lat. 37 N., long. 51 20 W. on Oct. 9 (The New York Times, Oct. 23, 1861, p.8, col.5) might have been related to Storm 6, 1861.

Storm 7, 1861 (Oct. ?).

Dunn and Miller (1960) are the co-authors who have mentioned this storm to have occurred at Cape Hatteras in October 1861 without specifying the day.

The author of this study has investigated this case using information published in newspapers, mainly in The New York Times. He found some ships that reported strong gales from the N. or heavy weather, mainly to the north of Hatteras, starting around Oct. 7 and lasting for several days. He also found that winds at New York exhibited a component from the north over the period Oct. 7-10 and that they were particularly strong on Oct. 8. These findings do not seem to support a tropical system but the author made the decision of retaining the storm indicated by Dunn and Miller (1960) due to the lack of solid evidence against its existence. Therefore, Storm 7, 1861 was placed at Cape Hatteras in October 1861 (Fig. 4).

Ludlum 1963) has referred to this storm as the "Expedition hurricane" because the so-called expedition -"the largest fleet of warships and transports ever assembled"- set sail from Fortress Monroe, Va., on Oct. 29 to attack Confederate positions in the Carolinas and Georgia during the Civil War and there was some fear about its fate.

The author of this study produced the track for Storm 8, 1861 which is displayed in Fig. 4. The following information was useful in determining such a track: 1) Bark "Honduras", lat. 28 30 N., long. 79 40 W., Nov. 1. Heavy gale from S.E., at noon was atruck by a white squall and then was boarded by a heavy sea. At night, the wind increased to a hurricane , was obliged to scud the bark all night under close-reefed main-topsail (The New York Times, Nov. 6, 1861, p.8, col.6). 2) Observations from the Board of Health, Charleston, S.C. Nov. 1. "Rainy and windy-disagreeable day". Nov. 2. Strong N.W. wind, barometer raising rapidly from 29.74 inches at 7 A.M. (Ludlum, 1963). 3) At Hatteras Inlet, a fort was captured earlier and The New York Tribune's special correspondent reported the gale as having increased during the evening of Nov. 1 to a "perfect whirlwind" by early morning. At 3 A.M. Nov. 2 waves commenced to drive over the sandy strips covering all dry land except the fort. For 4 hours the island was submerged but by 7 A.M. the waters commenced to subside (Ludlum, 1963). 4) Bark "Golden Ruder", Nov. 2, lat. 33 20 N., long. 75 W., took a severe gale from S., lasting for 48 hours (The New York Times, Nov. 6, 1861, p.8, col.6). 5) Bark "Venus", Nov. 2, lat. 36 N., long. 73 W., experienced a tremendous gale from S.S.E. which lasted for 8 hours (The New York Times, Nov. 6, 1861, p.8, col.6). 6) Bark "Indus", Nov. 2, lat. 37 N., long. 70 30 W., experienced the late gale from E.S.E. (The New York Times, Nov. 9, 1861, p.8, col.6). 7) Bark "Arethusa", Nov. 2, lat. 37 28 N., long. 74 30 W., had the late gale from E.S.E. to S.E. (The New York Times, Nov. 6, 1861, p.8, col.6). 8) Schr. "Nueva Ex", Nov. 2, lat. 38 N., long. 72 W., had a heavy gale (The New York Times, Nov. 8 1861, p.8, col.6). 9) Brig "Lady of the Lake", Nov. 2, lat. 38 N., long. 74 W., had a very heavy gale from E.S.E. to S.E. (The New York Times, Nov. 6, 1861, p.8, col.6). 10) Schr. "Advance", Nov. 2, lat. 38 25 N., long. 74 30 W., experienced a heavy gale from E.S.E. to S.E. (The New York Times, Nov. 6, 1861, p.8, col.6). 11) The rise of the Potomac on Nov.2 was unequaled within the memory of oldest inhabitants, wharves at the Navy-yard went all under water (The New York Times, Nov. 4, 1861, p.1, col. 5). 12) Bark "Sclavonia", Nov. 2, lat. 41 N., long. 71 W., encountered a furious gale from E.S.E. (The New York Times, Nov. 6, 1861, p.8, col.6). 13) Bark "Johanne Louise", Nov. 2, northern edge of the Gulf Stream, had a severe gale from S.E. (The New York Times, Nov. 8, 1861, p.8, col.6). 14) Brig "Thomas M. Mayhew", Nov. 2, 100 miles S.E. of Sandy Hook, experienced a violent gale from S.S.E. to S. lasting for 8 hours (The New York Times, Nov. 6, 1861, p.8, col.6). 15) In New York City, the storm commenced on Saturday morning (Nov. 2) and continued for 20 hours. Main winds from E. and N.E. raised a tremendous tide (Ludlum, 1963). 14) At New York harbor, wind E.N.E. blowing a gale with rain

at sunset Nov. 2 (The New York Times, Nov. 3, 1861, p.8, col.6). 17) Brig "Crown Point", Nov. 2, off Fire Island, experienced a severe gale from E. (The New York Times, Nov. 6, 1861, p.8, col.6). 18) Brig "Suwanee", yesterday (Nov 2), off the Bar, experienced a N.E. gale so severe that was compelled to haul off (The New York Times, Nov. 4, 1861, p.8, col.6). 19) Ship "Revenue", Nov. 2, off Nantucket, had a very heavy E. gale lasting for 15 hours (The New York Times, Nov. 6, 1861, p.8, col.6). 20) Ship "Cambina", Nov. 2, off Nantucket, experienced a very heavy gale from E. to S.E. to S. (The New York Times, Nov. 6, 1861, p.8, col.6). 21) Bark "Barzillar", Nov. 2, off George's, encountered a violent gale from S.E. (The New York Times, Nov. 10, 1861, p.8, col.6). 22) Ship "Logan", night of Nov. 2, was hove in a gale from E.N.E. when off Shinnecock (The New York Times, Nov. 5, 1861, p.8, col.6). 23) Message from Boston. A heavy N.E. gale commenced at 9 P.M. Nov. 2 lasting for 10 hours. The noon tide (Nov. 3) overflooded several wharves. This was the highest tide in several years (The New York Times, Nov. 4, 1861, p.8, col.6). 24) Bark "Cabot", Nov. 3, off Montauk, had a very heavy gale from E.S.E. (The New York Times, Nov. 6, 1861, p.8, col.6) Author's note: In accordance with the storm motion, the "Cabot" should have experienced this gale early on Nov. 3. 25) At New York harbor, wind W. to W.N.W. during daytime Nov. 3 (The New York Times, Nov. 4, 1861, p.8, col.6). 26) At New Bedford, Ma., severe gale from S.E. causing a very heavy tide in the morning of Nov. 3. Samuel Roadman's observation: Barometer 29.52 inches at 7 A.M. Nov. 3 with E.S.E. wind force 5 (Ludlum, 1963). Author's note: Force 5 is equivalent to winds between 19 and 24 miles per hour. 27) Boston, Ma., 9 P.M. Nov. 2, E.N.E. wind force 4 (13-18 miles per hour). Very strong wind in the early morning hours (Nov. 3). Heavy rain until 10 A.M. Nov.3, the heaviest downpour between 8 and 9 A.M. At 9 A.M., the wind suddenly changed to S.E. and soon subsided to force 2 (4 to 7 miles per hour). Wind was light from S.W. to S. after noon time. Rain stopped at 10 A.M. and it was almost clear by 10:30 A.M. Lowest barometer

was 29.50 inches at 2 P.M. (Ludlum, 1963).

Based on information contained in items 1) and 3), Storm 8, 1861 might have reached hurricane intensity late on Nov. 1 and early on Nov. 2. However, it is clear that the barometer readings contained in items 26) and 27) do not support hurricane winds as the storm moved over New England on Nov. 3.